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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,720	06/05/2006	Toshiaki Shimada	740819-1147	8572

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EXAMINER	
KRAUSE, JUSTIN MITCHELL	
ART UNIT	PAPER NUMBER
3656	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,720	SHIMADA, TOSHIAKI	
	Examiner	Art Unit	
	JUSTIN KRAUSE	3656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4 and 6-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3, 4 and 6-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 October 2009* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 1 and 4 is objected to because of the following informalities: In claim 1, the phrase "the arm components includes" (line 8) is improper grammar. The phrase should be amended to read –the arm components include-- or --the arm components including--.

For clarity, the phrase "an outer surface" in line 17 of claim 1 should be changed to –an outer surface of the drive shaft--.

Claim Rejections - 35 USC § 103

Claims 1, 4, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers (US Patent 5,738,481) in view of Palmero (US Patent 6,531,798).

Rogers discloses an articulated industrial robot comprising:

A robot arm (fig. 2 for example) including a plurality of arm components (30/44, 51/92) connected to one another by connection shafts (46), a base (12) to which the robot arm is connected, wherein,

the robot arm includes arm actuation means (36, 64, 70) for swinging the arm components,

the arm components including a first arm component (51/92) at a tip side of the robot arm, the first arm component having a wrist (which rotates as illustrated by rotation direction 102 in figure 5a, or may be a ball joint, 114/116 as illustrated in figure 5b),

the arm components including a second arm component (30/44) which is closer to the base than the first arm component is, being divided at an axially intermediate portion (30 is separate from 44) into a base-side portion (30) and a tip-side portion (44).

Rogers does not disclose the second arm component having rotation means for rotating the tip side part around the arm axis relative to the base side part,

the rotation means including a drive shaft extending in the arm axis direction and having a thread groove in its outer surface, a moving device for axially moving the drive shaft, and a threaded member meshed with the thread groove of the drive shaft, and

the moving device is fixed to one of the base-side part and the tip-side part, while the threaded member is fixed to the other.

Palmero teaches an arm component (10/70) which has a base-side part (10) and a tip-side part (70) having rotation means (col. 3, lines 26-30) for rotating the tip-side part around the arm axis relative to the base side part,

the rotation means including a drive shaft (60) extending in the arm axis direction and having a thread groove (as shown in fig. 1) in its outer surface, a moving device (20 and 14) for axially moving the drive shaft (the drive shaft is axially movable relative to the tip-side part), and a threaded member (82) meshed with the thread groove of the drive shaft, and

the moving device is fixed to the base-side part, while the threaded member is fixed to the tip-side part , and the base side part and the tip side part are hollow, (see

fig. 1 of Palmero), the moving device is contained in the base-side part, the threaded member is contained in the tip-side part. (Contained is interpreted as 'including or incorporating', therefore under a broad and reasonable interpretation, the threaded member is contained in the assembly which comprises the "tip-side part") for the purpose of providing a compact, lightweight rotary and linear movement actuator device which is simple and economical to manufacture (col. 1, lines 46-50).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Rogers to include rotation means rotation means for rotating the tip side part around the arm axis relative to the base side part, the rotation means including a drive shaft extending in the arm axis direction and having a thread groove in its outer surface, a moving device for axially moving the drive shaft, and a threaded member meshed with the thread groove of the drive shaft, and the moving device is fixed to one of the base-side part and the tip-side part, while the threaded member is fixed to the other for the desired purpose of providing a compact, lightweight rotary and linear movement actuator which is simple and economical to manufacture as taught by Palmero.

Regarding claim 4, Rogers discloses the first arm component including wrist actuation means for reciprocating the wrist in the arm axis direction (92 reciprocates with respect to 51).

Regarding claims 7 and 9, Rogers discloses the second and first arms directly connected to one another, and the second arm connected directly to the base.

Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers in view of Palmero as applied to claims 1 and 2 above, and further in view of Shimada (JP 2003-343679).

Rogers does not disclose the moving device including a nut meshed with the thread groove of the drive shaft, a motor for rotating the nut around the drive shaft, and a speed reduction mechanism for reducing a rotation speed of the output shaft of the motor to transmit torque of the motor to the nut.

Shimada teaches a moving device including a nut meshed with the thread groove of the drive shaft, a motor for rotating the nut around the drive shaft and a speed reduction mechanism for rotating the nut around the drive shaft (translated abstract, as supplied by Applicant) for the purpose of providing a moving device capable of axially moving a drive shaft at a predetermined speed without being disturbed by a gear changing means.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Rodgers to include a moving device including a nut meshed with the thread groove of the drive shaft, a motor for rotating the nut around the drive shaft and a speed reduction mechanism for rotating the nut around the drive shaft for the desired purpose of providing a moving device capable of axially moving a drive shaft at a predetermined speed without being disturbed by a gear changing means as taught by Shimada.

Regarding claim 6, Rogers discloses the first arm component including wrist actuation means for reciprocating the wrist in the arm axis direction (92 reciprocates with respect to 51).

Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers in view of Palmero as applied to claim 1 above, and further in view of Hodge (US Patent 4,766,775).

Rogers does not specifically disclose the first arm component connected to the second arm component with another arm component interposed between, or the second arm component connected to the base with another arm component interposed between.

Hodge teaches a robot which includes a plurality of first and second arm components (both extension and rotation units are disclosed, as well as the component including the wrist (first arm component)), which may be arranged in any arrangement as needed to provide an arrangement desirable for accomplishing the task required (col. 1, lines 18-23).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Rogers to include the first arm component connected to the second arm component with another arm component interposed between, or the second arm component connected to the base with another arm component interposed

between for the purpose of arranging the robot in a desired configuration to accomplish the task required as taught by Hodge.

Double Patenting

There is currently no double patenting between the instant application and Pending US Application 10/581,112.

Response to Arguments

Applicant's arguments filed October 26, 2009 have been fully considered but they are not persuasive. Applicant argues language inconsistent with the language of the claim. Applicant's argument is that the moving device is "incorporated in one of the base side part and the tip side part" (remarks, page 8), while the claim recites "the moving device is contained in one of the base side part and the tip side part". These phrases differ in their interpretations, and Applicant's position is unclear. "Contained" is defined in the 10th edition of Merriam-Webster's Collegiate Dictionary as, "restrained" or "to have within". "Incorporated" is defined as "to unite or work into something already existent as to form an indistinguishable whole", or "to unite in or as one body". Palmero never the less satisfies both definitions, as the second arm component includes the moving device within it, and the moving device is united with the second arm component as one body.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUSTIN KRAUSE whose telephone number is (571)272-3012. The examiner can normally be reached on Monday - Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Justin Krause/
Examiner, Art Unit 3656

/Thomas R. Hannon/
Primary Examiner, Art Unit 3656